APPENDIX 5.2.17-1

Project: Daniel Island EIS
Subject: Erosion Estimates in FMNF from Rail Corridor Segments 5I, 5K and 5J
Project No.: C103353.01

Estimates of Erosion Sediment Yield In the Francis Marion National Forest

Phase	Land Use	Analysis Period (years)	Soil Loss Rates (1) (tn/ac/yr)	Pepper Gully/Flagg Creek Drainage Basin			Little Johnson Creek Drainage Basin			Totals	
				Area (acres)	Annual Erosion (4) (Tons)	Annual Sediment Yield (5) (Tons)	Area (acres)	Annual Erosion (4) (Tons)	Annual Sediment Yield (5) (Tons)	Annual Erosion (Tons)	Annual Sediment Yield (Tons)
Existing	Forest	1	0.03	1020	30.6	7.7	1535	46.1	11.5	**76.7**	**19.2**
Construction Without BMP's	Forest	1	0.03	1012	30.4	7.6	1523	45.7	11.4	76.1	19.0
	Rail Corridor	1	1	8.0	8.0	2.0	12.0	12.0	3.0	20.0	5.0
Sub-Totals Construction Phase w/o BMP's				1020	38.4	9.6	1535	57.7	14.4	**96.1**	**24.0**
% Increase From Existing										20	20
Construction With BMP's	Forest	1	0.03	1012	30.4	7.6	1523	45.7	11.4	76.1	19.0
	Rail Corridor	1	1	8.0	8.0	0.4	12.0	12.0	0.6	20.0	1.0
Sub-Totals Construction Phase w/ BMP,s				1020	38.4	8.0	1535	57.7	12.0	**96.1**	**20.0**
% Increase From Existing										20	5

Notes:

(1) The Soil Loss Rate (tn/ac/yr) was obtained from the Erosion Sediment Yield Background Information For the Sumter National Forest Plan Process Records, United States Forest Service

(2) A Sediment Delivery Ratio (SDR) was obtained from the Erosion Sediment Yield Background Information

(3) With the proper use and installation of BMP's (i.e., silt fences, turbidity barriers, sediment basin etc.) the amount of sediment transported from the construction area is approximately 20% of the Sediment Yield.

(4) Annual Erosion (Tons) = Soil Loss Rate (tn/ac/yr) x Area (acres) x 1 Year

(5) Annual Sediment Yield (Tons) = 0.25 x Annual Erosion (Tons)

(6) Annual Sediment Yield in the Rail Corridor with BMP's = Annual Erosion (Tons) x 0.25 x 0.20.

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